



DCHT 24X

Features:

- High performance digital sensors and circuits ensure accurate measurement and temperature compensation
- Good long term stability and reliability
- 100% field changeable sensors, no re-calibration needed
- Multiple output signals selectable: 4-20mA, 0-5V or 0-10V
- Display in degrees Fahrenheit or Celsius (connection to Modbus)

Technical data:**CO₂**

Sensor	Dual Beam NDIR
Range	0-2,000 ppm
Output	RS485 and Analog Output (0-5V/0-10V/4-20mA)
Accuracy	±70 ppm or ±5% of reading

Relative Humidity

Sensor	Capacitance polymer
Range	0~100% non condensing
Output	4-20mA, 0-5V or 0-10V, RS 485
Accuracy	5% RH (25°C, 20~80% RH)
Hysteresis	< ±1% RH
Response time	< 10s (25°C, in slow air)
Drift	< ±0.5% RH / year

Temperature

Sensor	NTC 10K internal
Range	-40~150°C (-40~302°F)/transmitter
Output	4-20mA, 0-5V or 0-10V, RS 485
Accuracy	< ±0.5°C @ 25°C

General

Power	12 to 24Vac/dc ±10%
Current Output Load	< 500Ω
Display	LCD screen
Display Resolution	0.1°C, 0.1% RH
Temperature Limit	-30~70°C, 0~95% RH (Non condensing)
Plastic Housing	Flammability rating UL 94V0 file E194560
Alarm Connection	200 mA@12Vdc

Applications:

CO₂ sensor with Humidity & Temperature transmitters are designed for environment monitoring and controlling in industrial, commercial and other buildings.

These transmitters can be used to monitor CO₂ levels, air temperature and humidity in:

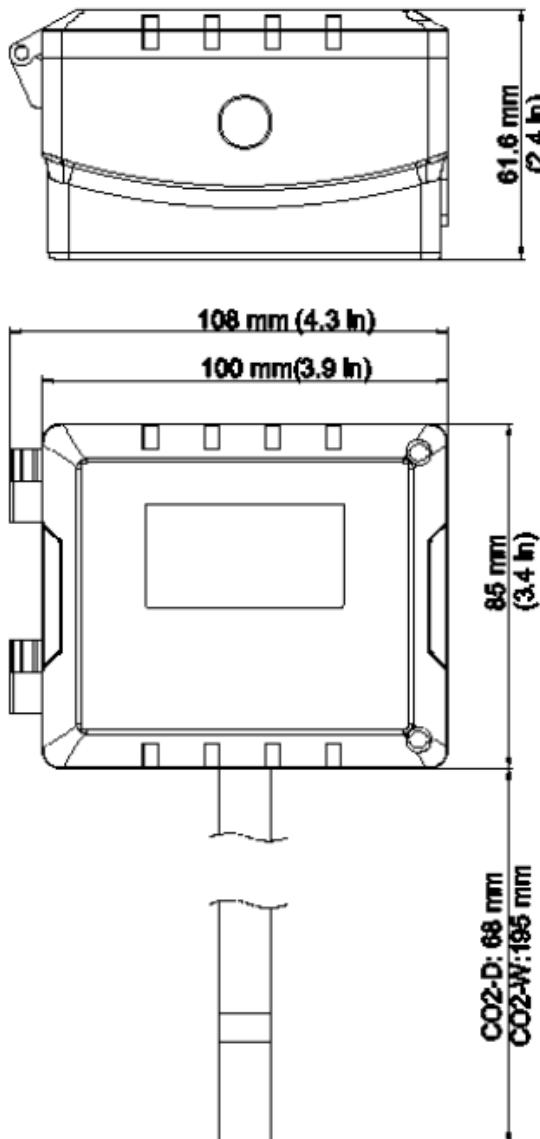
- various industrial plants
- clean rooms
- labs
- machine rooms
- offices
- commercial buildings
- airports
- stations
- libraries and stadiums.

Ordering Codes

DCHT 24X	CO ₂ , RH+T, Modbus, 0-2,000ppm
Option	3,000, 5,000, 10,000ppm

**Dimensions**

DCHT 24X

**External Alarm**

When connected to the transmitter this external alarm will sound and flash a red light when the CO₂ levels become "POOR".

You can set the alarm setpoints in the menu using RS485.

There are two alarm setpoints:

1. Fair alarm: The alarm output will be turned on for the ALARM ON seconds, then be turned off for ALARM OFF seconds, and go out on on-off-on-off.
2. Poor alarm: The alarm output will be turned on and kept on.

ALARM ON can be set in register 162

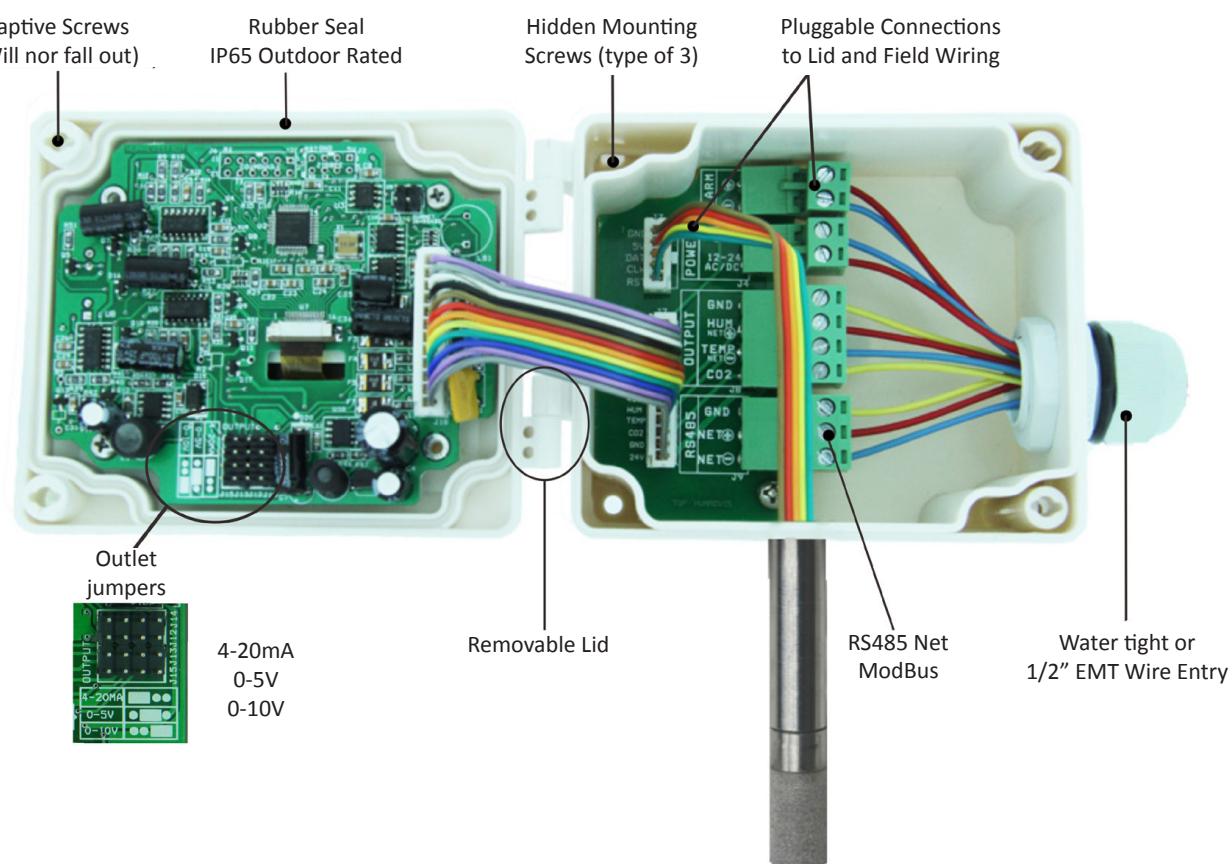
ALARM OFF can be set in register 163

Fair setpoint can be set in register 165

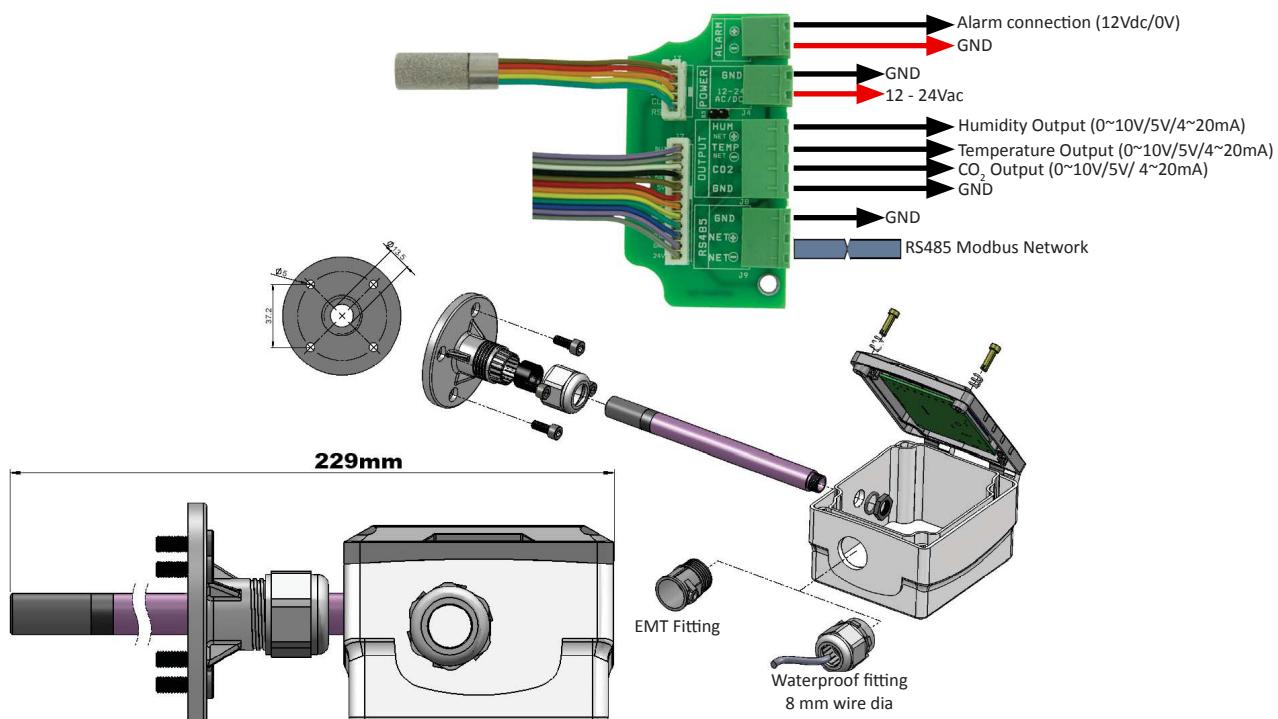
Poor setpoint can be set in register 166



Features and Wiring Diagram

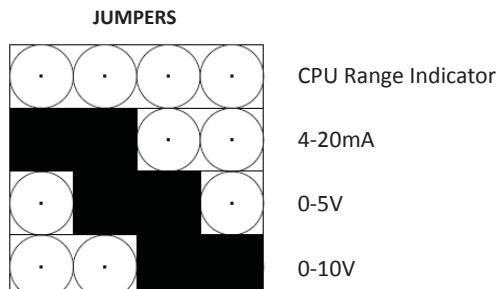
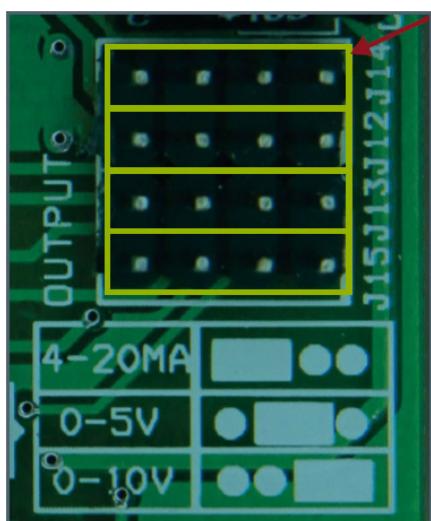


Assembly and Wiring





Jumper Settings



Output Modbus Settings

Can auto detect hardware jumper sets, do not need to set registers

Voltage & Current Formula

0-10V output Temperature (C) = (Voltage * 100 - offset) / 10

Temperature (F) = (DegC) * 9 / 5 + 32

Humidity = Voltage / 10

0-5V output Temperature (C) = (Voltage * 100 - offset) / 20

Temperature (F) = (DegC) * 9 / 5 + 32

Humidity = Voltage / 20

4-20mA output Temperature (C) = ((Current - 4)/0.16) - offset/10

Temperature (F) = DegC * 9 / 5 + 32

Humidity = (Current - 4)/0.16

--- Temperature(F) : register 100

--- Temperature(C) : register 101

Applied for all --- Offset : register 442, offset from zero C to adjust temperature range

for example 0 = 0-100C; 300 = -30 to +70C (Default setting)

where Voltage is the input voltage in Volts, and Current is in mA, ie 10 = 10ma



1. Humidity Sensor Calibration

Use a good humidity reference, let the room or cabinet stabilize for at least 30 minutes.

Your reference meter should be calibrated and up to date, meters can easily be out by 20% and more from their stated accuracy from various factors.

Preferably use a cabinet or box around the sensor to be calibrated.

If you cannot use a cabinet, be sure all the windows and doors are closed for the duration of the test.

Setting low and high humidity values for multi point calibration procedures can be accomplished by

- Using humidity reference bottles, these are often available on ebay or the google shopping site by searching "Humidity calibration".
- Here's the link for google shopping: <http://www.google.com/shopping?hl=en&tab=wf>

Single point calibration:

- Read the value from your meter, write this value to register 112 which is the current humidity reading Register.

112	Relative Humidity in Percentage
-----	---------------------------------

2 point Calibration:

- Use a humidity reference bottle or humidity chamber
- Set the humidity to a low value, usually around 30%.
- Let the humidity stabilize for at least 30 minutes,
- Read the value from your meter and write this value to Register 112

112	Relative Humidity in Percentage
-----	---------------------------------

- Repeat this procedure at a higher humidity, usually around 70% and at least 10% greater than the first low value that you used for the first point of calibration.

3 and up to 10 point Calibration:

- Repeat the procedure of the two point calibration method, only use more calibration points, always writing to Register 112
- Each reference humidity setting should be at least 10% away from the other calibration points.

If you need to repeat any of the calibration points, simply repeat the procedure. The sensor will take the new calibration point if the new value is more than 5% away from previous calibration points. If its closer than 5%, the old values will be tossed out and the new ones incorporated into the calibration table.

You can switch from user calibration data to factory calibration data, back and forth by writing to register 378, value = 1 means the user table, value = 0 means the factory table. Switching back and forth is possible, no data is lost by jumping from the user table or factory table.

117	Calibration table select. 0: factory data 1: user data
-----	--

If the calibration procedure becomes muddled you can delete the user calibration points by writing 1 to register 112, all user calibration is tossed out and the default factory values are restored to the user calibration table.

All calibration points are saved to non volatile memory and are not lost even for extended periods without power. Sensor elements can be swapped from one unit to another and the calibration points will be automatically transferred along with the sensor element, the main display unit will handle sensor swapping automatically.

2. Temperature Sensor Calibration

Write current temperature to Reg101 for Fahrenheit or 102 for Celcius.

101	2	0~600	--	ROOM TEMPERATURE reading in DegF. Can also write to this register for single point calibration.
102	2	0~600	--	ROOM TEMPERATURE reading in DegC. Can also write to this register for single point calibration.

This operation will change the current temperature to user input value.



3. Temperature Current Output Calibration 4-20mA

367	Calibrate Temperature Output in 4-20mA mode
369	Output for current factory calibration
141	Temperature output current calibration offset value adjust value(0 - 10%)
142	Temperature output current calibration offset value adjust value(10% - 20%)
143	Temperature output current calibration offset value adjust value(20% - 30%)
144	Temperature output current calibration offset value adjust value(30% - 40%)
145	Temperature output current calibration offset value adjust value(40% - 50%)
146	Temperature output current calibration offset value adjust value(50% - 60%)
147	Temperature output current calibration offset value adjust value(60% - 70%)
148	Temperature output current calibration offset value adjust value(70% - 80%)
149	Temperature output current calibration offset value adjust value(80% - 90%)
150	Temperature output current calibration offset value adjust value(90% - 100%)

User can also calibrate each 10% percent output by manually change the reg141 to reg150

4. Humidity Current Output Calibration 4-20mA

151	Humidity output current calibration offset value adjust value(0 - 10%)
152	Humidity output current calibration offset value adjust value(10% - 20%)
153	Humidity output current calibration offset value adjust value(20% - 30%)
154	Humidity output current calibration offset value adjust value(30% - 40%)
155	Humidity output current calibration offset value adjust value(40% - 50%)
156	Humidity output current calibration offset value adjust value(50% - 60%)
157	Humidity output current calibration offset value adjust value(60% - 70%)
158	Humidity output current calibration offset value adjust value(70% - 80%)
159	Humidity output current calibration offset value adjust value(80% - 90%)
160	Humidity output current calibration offset value adjust value(90% - 100%)

User can also calibrate each 10% percent output by manually change the reg151 to reg160

5. CO₂ Current Output Calibration 4-20mA

161	CO ₂ output current calibration offset value adjust value(0 - 10%)
162	CO ₂ output current calibration offset value adjust value(10% - 20%)
163	CO ₂ output current calibration offset value adjust value(20% - 30%)
164	CO ₂ output current calibration offset value adjust value(30% - 40%)
165	CO ₂ output current calibration offset value adjust value(40% - 50%)
166	CO ₂ output current calibration offset value adjust value(50% - 60%)
167	CO ₂ output current calibration offset value adjust value(60% - 70%)
168	CO ₂ output current calibration offset value adjust value(70% - 80%)
169	CO ₂ output current calibration offset value adjust value(80% - 90%)
170	CO ₂ output current calibration offset value adjust value(90% - 100%)

User can also calibrate each 10% percent output by manually change the reg161 to reg170



6. Relative Registers for Calibration

370	Auto/Manual output calibrate set. 0 : default value 1 : user manual. Bit 0 :temperature bit1 :humidity
371	Temperature manual output value input, relative with register 370
372	Humidity manual output value input, relative with register 370
186	The factory default is 1. Temperature Transducer output range, 1=0-10V, 2=0-5V, 3=4-20mA
187	The factory default is 1. Humidity Transducer output range, 1=0-10V, 2=0-5V, 3=4-20mA

- reg370: this register allows the user to set their own output value for temperature and humidity
- bit 0: temperature manual output enable/disable, 0=disable 1=enable
- bit 1: humidity manual output enable/disable, 0=disable 1=enable
- Reg371: Temperature manual output value input, relative with register 370, for example, if output type is set to 0-10V(reg186 is set to 1), and bit0 of reg370 is set to manual mode(reg371 is set to 1), if write 100 to reg371, current temperature output will be 1V, if 200, output will be 2V, this function makes it possible for the user to test the hardware or generate their own voltage/current more easier
- Reg372: just like reg371, but it's for humidity manual output.
- Reg186 & Reg187: see explanations above

7. Temperature Output Offset Settings

173 | Temperature output offset, depending on sensor range

Firmware 340 och nedåt: 0-10V enligt 0-100°C

Firmware 341 och uppåt: 0-10V enligt -30-70°C

Lägg till register 442, customer can set the temperature range offset, base range is 0-100°C:

For example:

If register 442 set to 300, then current output range will be -30-70°C

If register 442 set to 100, then current output range will be -10-90°C

0-10V output:

Temperature (C) = (Voltage * 100 - offset) / 10

Temperature (F) = (Voltage * 100 - offset*9/5) / 10

Humidity = Voltage / 10

0-5V output:

Temperature (C) = (Voltage * 100 - offset) / 20

Temperature (F) = (Voltage * 100 - offset*9/5) / 20

Humidity = Voltage / 20

4-20mA output:

Temperature (C) = ((Current - 0.004)/0.00016) - offset/10

Temperature (F) = ((Current - 0.004)/0.00016) - offset*9/50

Humidity = (Current - 0.004)/0.00016

--- Temperature (F) : register 100

--- Temperature (C) : register 101

--- Offset : register 442, offset from zero C to adjust min max range, for example 0 = 0-100C, 300 = -30 to +70C

--- Voltage in Volt

--- Current in A



7. Register List

CO₂ uses MODBUS protocol to communicate with others.
Following is a table of MODBUS Registers.

Address	Bytes	Register and Description
0 to 3	4	Serial Number - 4 byte value. Read-only
4 to 5	2	Software Version – 2 byte value. Read-only
6	1	ADDRESS. Modbus device address
7	1	Product Model. This is a read-only register that is used by the microcontroller to determine the product
8	1	Hardware Revision. This is a read-only register that is used by the microcontroller to determine the hardware rev.
9	1	PIC firmware version
10	1	PLUG_N_PLAY_ADDRESS, 'plug n play' address, used by the network master to resolve address conflicts. See VC code for algorithms
15	1	Base address selection.0 = Protocol address,1 = PLC address.
16	1	Firmware Update Register, used to show the status of firmware updates
17 - 99		Blank, for future use
100	1	Temperature sensor select for display register 101&102. 0 = internal sensor. 1 = external sensor.
101	1	Select the temperature value display on LCD in DegC or DecF, 1 = F, 0 = C.
102	1	Internal temperature value of Celsius degree with 0.1 degree resolution
103	2	Internal temperature value of Fahrenheit degree with 0.1 degree resolution
104	2	External temperature value of Celsius degree with 0.1 degree resolution
105	2	External temperature value of Fahrenheit degree with 0.1 degree resolution
106	2	Relative humidity in percentage
107	2	Sensor frequency on time
108	1	Humidity sensor heating enable, 0 = disable, 1 = enable.
109	1	Set 1 to this register if there is a CO ₂ sensor inside the unit, else clear it to 0
110	2	The ppm of internal CO ₂ sensor. It will be 65535 when there is not internal CO ₂ sensor and display '****' on the
111-160	2	The ppm of external CO ₂ sensor.
161	1	"Alarm output and alarm state register: Bit7: 0 = Auto, 1 = Manual. Bit(1:0): 00 = alarm relay state is off, 01 = relay is pulsing in prealarm mode as defined by reg119, 10 = continuous alarm, on always"
162	1	The ring on period of alarm in beeping/prealarm mode. (seconds, max = 20 seconds)
163	1	The ring off period of alarm in beeping/prealarm mode. (seconds, max = 20 seconds)
164	1	If the alarm is enabled, the unit will delay x seconds before turn on the beeper.
165	2	The pre_alarm ppm setpoint of internal CO ₂ sensor.
166	2	The continuous_alarm ppm setpoint of internal CO ₂ sensor.
167	2	The ppm offset for calibrating the internal CO ₂ sensor ppm.
168	2	Delta value for eliminating the pulse ppm value. The default value is 200.
169	1	Filter times, make the ppm value go smooth. The default value is 5.
170-219	2	*50 The pre_alarm ppm setpoint of external CO ₂ sensor. Support 50 external nodes.
220-269	2	*50 The continuous_alarm ppm setpoint of external CO ₂ sensor. Support 50 external nodes.
270-319	2	*50 The ppm offset for calibrating the external CO ₂ sensor ppm. Support 50 external nodes.



Address	Bytes	Register and Description
320	1	"Analog output auto or manual. Bit0 for temperature, 0 = auto, means the output value according to the temperature read from sensor; 1 = manual, means the output value according to the value set in output_manual_value_temp (register 321). Bit1 for humidity, 0 = auto, means the output value according to the humidity read from sensor; 1 = manual, means the output value according to the value set in output_manual_value_humidity (register 322). Bit2 for co2, 0 = auto, means the output value according to the co2 read from sensor; 1 = manual, means the output value according to the value set in output_manual_value_co2 (register 323)."'
321	2	Output_manual_value_temp
322	2	Output_manual_value_humidity
323	2	Output_manual_value_co2
324	2	The minimum degree of temperature range corresponding to the temperature output(0-5V,0-10V,4-20mA)
325	2	The maximum degree of temperature range corresponding to the temperature output(0-5V,0-10V,4-20mA)
326	2	The minimum percent of humidity range corresponding to the humidity output(0-5V,0-10V,4-20mA)
327	2	The maximum percent of humidity range corresponding to the humidity output(0-5V,0-10V,4-20mA)
328	2	the minimum ppm of co2 range corresponding to the co2 output(0-5V,0-10V,4-20mA)
329	2	the maximum ppm of co2 range corresponding to the co2 output(0-5V,0-10V,4-20mA)
330	1	INFO_BYTE, TBD.
331	1	RS485 Baudrate, 0 = 9600, 1 = 19200
332	2	Temperature output current calibration offset value adjust value(0 - 10%)
333	2	Temperature output current calibration offset value adjust value(10% - 20%)
334	2	Temperature output current calibration offset value adjust value(20% - 30%)
335	2	Temperature output current calibration offset value adjust value(30% - 40%)
336	2	Temperature output current calibration offset value adjust value(40% - 50%)
337	2	Temperature output current calibration offset value adjust value(50% - 60%)
338	2	Temperature output current calibration offset value adjust value(60% - 70%)
339	2	Temperature output current calibration offset value adjust value(70%- 80%)
340	2	Temperature output current calibration offset value adjust value(80% - 90%)
341	2	Temperature output current calibration offset value adjust value(90% - 100%)
342	2	Humidity output current calibration offset value adjust value(0 - 10%)
343	2	Humidity output current calibration offset value adjust value(10% - 20%)
344	2	Humidity output current calibration offset value adjust value(20% - 30%)
345	2	Humidity output current calibration offset value adjust value(30% - 40%)
346	2	Humidity output current calibration offset value adjust value(40% - 50%)
347	2	Humidity output current calibration offset value adjust value(50% - 60%)
348	2	Humidity output current calibration offset value adjust value(60% - 70%)
349	2	Humidity output current calibration offset value adjust value(70% - 80%)
350	2	Humidity output current calibration offset value adjust value(80%- 90%)
351	2	Humidity output current calibration offset value adjust value(90% - 100%)
352	2	CO2 output current calibration offset value adjust value(0 - 10%)
353	2	CO2 output current calibration offset value adjust value(10% - 20%)
354	2	CO2 output current calibration offset value adjust value(20% - 30%)
355	2	CO2 output current calibration offset value adjust value(30% - 40%)
356	2	CO2 output current calibration offset value adjust value(40% - 50%)
357	2	CO2 output current calibration offset value adjust value(50% - 60%)
358	2	CO2 output current calibration offset value adjust value(60% - 70%)

Adress	Byte	Register and beskrivning
359	2	CO ₂ output current calibration offset value adjust value(70% - 80%)
360	2	CO ₂ output current calibration offset value adjust value(80%- 90%)
361	2	CO ₂ output current calibration offset value adjust value(90% - 100%)
362	1	RTC second, from 0 to 59.
363	1	RTC minute, from 0 to 59.
364	1	RTC hour, from 0 to 23.
365	1	RTC day, from 1 to 31.
366	1	RTC week, from 0 to 6, 0 = Sunday.
367	1	RTC month, from 1 to 12.
368	2	RTC year, from 0 to 99 (2000 to 2099).
369	1	The password to log in the menu system. 1=Enable. 0=Disable.
370	1	The first password character, from '0' to '9'.
371	1	The second password character, from '0' to '9'.
372	1	The third password character, from '0' to '9'.
373	1	The fouth password character, from '0' to '9'.
374	2	Menu block time. The menu will back to idle state after this seconds.
375	2	3Backlight keep time. The backlight will turn off after this seconds
376	1	External node plus&play. 1=Enable, 0=Disable.
377	1	Device number in the scan database, inlcude the master unit itself.
378	1	Set 1 to clear the scan database
379-383	5	First device of the database, the display unit takes it. 5 bytes: 1st = address, 2nd..5th = serial number
384-388	5	Second device of the database, the first external sensor. 5 bytes: 1st = address, 2nd..5th = serial number If the address is 0 or 255, that means no device behind.
389-393	5	...
	5	...
	5	...
629	5	The end of the database

MODBUS Registers for CO₂ Master

Address	Bytes	Register and Description	Comments
0..1	2	Lower 2 bytes of the serial number	
2..3	2	Upper 2 bytes of the serial number	
4	1	Firmware version lower byte. eg. FW version = 10.12, so lower byte = 12 AND high byte = 10. Fixed.	
5	1	Firmware version upper byte. eg. FW version = 10.12, so lower byte = 12 AND high byte = 10. Fixed.	
6	1	Modbus device address	
7	1	Product ID, Fixed.	
8	1	Hardware version	
9	1	Spare	
10	1	Spare	
11	1	Time zone	
12	1	Baudrate Setting: 0 = 9600bps, 1 = 19200bps	
13	1	Day lighting switch, 0 = disable day lighting feature, 1= enable	
14	1	Spare	
15	1	Reset flash. The unit will clear all configs to zero if this register being set to 0x55 = 85	
16	1	Firmware Update Register, used to show the status of firmware updates	
17...90	1 * 74	Spare	
91	1	Set 1 manual to write configurations to flash	
92	1	Period of write configurations to flash if configurations changed without setting register to 1. counter by second.	
93...99	7	Reserved for future.	
100 to 105	6	Reg100, MAC address, read only	
106	1	Reg106, IP mode. 0=static IP; 1= DHCP	
107 to 108	2	Reg107, upper two bytes of IP address	
109 to 110	2	Reg109, lower two bytes of IP address	
111 to 112	2	Reg111, right two bytes of SUBNET MASK address	
113 to 114	2	Reg113, left two bytes of SUBNET MASK address	
115 to 116	2	Reg115, right two bytes of GATEWAY address	
117 to 118	2	Reg117, left two bytes of GATEWAY address	
119	1	Reg119, 0, TCP server, (NO USE)	
120	1	Reg120, listen port at TCP server mode	
121	1	Ghost to reg 106	
122 to 123	2	Ghost to reg 107 to 108	
124 to 125	2	Ghost to reg 109 to 110	
126 to 127	2	Ghost to reg 111 to 112	
128 to 129	2	Ghost to reg 113 to 114	
130 to 131	2	Ghost to reg 115 to 116	
132 to 133	2	Ghost to reg 117 to 118	
134	1	Ghost to reg 119	
135	1	Ghost to reg 120	
136	1	Write 1 to set the ghost settings to the system and start new settings, then clear the ghost registers.	
137-171	40	Reserved	
172	1	Scan command< =6 start scan>/LHN add	

Address	Bytes	Register and Description	Comments
173	1	Subnet <add =1rs485 =2zigbee =4all> /LHN add	
174	1	NTP command< =6, start ntp >/LHN add	
175-178	4	Time Server0 ipaddress	
179-182	4	Time Server1 ipaddress	
183-186	4	Time Server2 ipaddress	
187-190	4	Time Server3 ipaddress	
191-194	4	Time Server4 ipaddress	
195-198	4	Time Server5 ipaddress	
199	1	Time Sync result: 0-Fail 1-Sucessful	
200	1	Temperature sensor selection, 0=external, 1=internal. Read only, it will be set to 1 if the humidity module exists.	
201	1	Select the unit of temperature to display on LCD. 0=degree Celsius, 1=degree Fahrenheit	
202	2	The value of on board temperature sensor, the unit is degree Celsius. The resolution is 0.1 degree.	Save
203	2	The value of on board temperature sensor, the unit is degree Fahrenheit. The resolution is 0.1 degree.	Opt
204	2	The value of external temperature sensor, the unit is degree Celsius. The resolution is 0.1 degree.	Save
205	2	The value of external temperature sensor, the unit is degree Fahrenheit. The resolution is 0.1 degree.	
206	2	The temperature offset for calibrating the internal temperature. The resolution is 0.1 degree.	
207	2	Relative humidity. The resolution is 0.1%	
208	2	Read only. The real frequency read from the humidity module, unuse.	
209	1	Read only. The number of the calibration table points.	
210	1	Internal CO ₂ sensor selection. The value is 1 as default.	
211	2	The CO ₂ ppm value of internal CO ₂ sensor.	
212	2	The CO ₂ ppm offset for calibrating internal CO ₂ sensor.	
213	2	The setpoint value of fair alarm for internal CO ₂ sensor.	
214	2	The setpoint value of poor alarm for internal CO ₂ sensor.	
215..468	2*254	The CO ₂ ppm value of the external CO ₂ sensors if there are/is CO ₂ nodes connect to it.	
469..722	2*254	The CO ₂ ppm offset for calibrating external CO ₂ sensors.	
723..976	2*254	The setpoint value of fair alarm for external CO ₂ sensors.	
977..1230	2*254	The setpoint value of poor alarm for external CO ₂ sensors.	
1231	2	The value to eliminate the pulse of the CO ₂ ppm.	
1232	1	The filter to make the ppm value smoothly, it is 5 as default.	
1233	1	Enable/Disable the password for the menu system operation. 0=Disable, 1=Enable.	
1234	1	The first digital of the password. Should be from 0 to 9.	
1235	1	The second digital of the password. Should be from 0 to 9.	
1236	1	The third digital of the password. Should be from 0 to 9.	
1237	1	The fourth digital of the password. Should be from 0 to 9.	
1238	1	The century of the real time clock.	
1239	1	The year of the real time clock.	
1240	1	The month of the real time clock.	
1241	1	The date of the real time clock.	
1242	1	The weekday of the real time clock.	
1243	1	The hour of the real time clock.	
1244	1	The minute of the real time clock.	

Address	Bytes	Register and Description	Comments
1245	1	The secod of the real time clock.	
1246	1	Alarm auto/manual control. Bit7: 0 = auto, 1 = manual; bit0:1 = pre_alarm; bit1: 1 = continuous_alarm; bit(1:0): 00 = stop_alarm	
1247	1	The alarm output turn on time, <= 20 seconds.	
1248	1	The alarm output turn off time, <= 20 seconds.	
1249	1	Alarm output delay time. It delays the alarm output when the alarm is triggered. It is 5 seconds as default.	
1250	1	Analog output auto/manual control. Bit 0 directs to temperature output, Bit 1 directs to humidity output, Bit 2 directs to CO ₂ output. 0=Auto, 1=Manual.	
1251	2	The manual value of temperature.	
1252	2	The manual value of humidity.	
1253	2	The manual value of CO ₂ .	
1254	1	Analog output mode, read only, select by jumper. 1=4-20mA, 2=0-5V, 3=0-10V	
1255	2	The minimun value of temperature for analog output.	
1256	2	The maximum value of temperature for analog output.	
1257	2	The minimun value of humidity for analog output.	
1258	2	The maximum value of humidity for analog output.	
1259	2	The minimun value of CO ₂ for analog output.	
1260	2	The maximum value of CO ₂ for analog output.	
1261	1	The period for the menu system to stay at the submenu. It goes to the main menu when it expires in the submenu.	
1262	1	The period for the LCD backlight keep on. The backlight turns on when key is triggered, and turns off the it expires.	
1263	1	Enable/Disable the plug-and-play feature of the external nodes. 0=disalbe, 1=enable.	
1264	1	The number of CO ₂ sensors connect to the unit, includes the internal CO ₂ sensor.	
1265	1	Set 1 to reset the scan table.	
1266..1270	1*5	The first CO ₂ node information. Normally it is the unit itself. Register1266: the modbus ID of the CO ₂ sensor. Register1267..1270: the serial number of the CO ₂ sensor.	
1271..1275	1*5	The second CO ₂ node information. Normally, it is the first external CO ₂ node.	
1276..1280	1*5	The third CO ₂ node information.	
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